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No 24

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very good — & evincing the power of the Nux Vomica

An

Inaugural Essay

on

Paralysis or Palsy

for the

Degree of Doctor of Medicine

in the

University of Pennsylvania

by

Henry Myers

of

Virginia

Philadelphia January 2nd 1828

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Paralysis or Palsy.

The term Palsy is an abbreviation of Paralysy or Paraly=
=sis, which is derived from the Greek verb παραλυω, signify=
=ing "to weaken". Palsy, and Apoplexy, were esteemed among
the most ancient writers, as the same disease. Neither the
word Paralysis or Palsy, is to be found in the works of Hip=
=pocrates, but the Author evidently speaks of the affection un=
=der the head of Apoplexy; and (according to Dr. Cooke) Ar=
=taeus, Galen, Alexander Trallianus, Aetius, and Paulus Aegi=
=neta, describe the different kinds of Paralysis, as Apoplexy,
and assert that they are one, and the same. The general
opinion upon the subject now, is, that they are in a mea=
=sure the same, in as much as, each is frequently produced
by the same causes, presenting similar symptoms, and
exhibiting at times, like phenomena. Dr. Good tells us, that
though Palsy does resemble Apoplexy very nearly in all its
symptoms, and general nature, and is often occasioned by
it, yet, the former should be considered more strictly a ner=
=vous affection, and less connected with a morbid state of
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the sanguiferous, or respiratory organs", and that, tho' the nerves both of motion, and of sensation, may be equally affected, and some of the faculties of the mind may participate in that affection, yet, the latter are never lost in the same degree, as they are in Apoplexy. This, then, is one great distinction between the two diseases; that, the intensity of action, and the extent of morbid influence, are much greater in Apoplexy, than in Palsy. Yet this is not the sole difference:- for, tho' Apoplexy may, and, doubtless does often terminate in Paralysis, it is not by any means a necessary result; for it often exists without leading to any such effect, and Palsy may make its appearance, without any previous attack of Apoplexy. Again. Tho', the diseases doubtless possess common symptoms, yet, there are some belonging to peculiarly to each, that they can never be confounded.

Many and various have been the definitions given of Palsy; but they seem to have been framed rather for the support of some favorite theory, than as an

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accurate description of the disease. Some have defined it, "An impotence of motion"; others, "An incapacity of sense, or motion, when the person is awake", and a third, "a corporeal torpitude, and muscular immobility, more, or less general, without somnolency". Dr. Cooke, in his highly instructing, and excellent work on 'Nervous Diseases', in addition to these has enumerated many others, alike imperfect, and has offered one, which he considers "as comprehending all the chief characteristics of Palsy". He says, "It is a disease, in which there is a diminution, or total loss, of the power of voluntary motion, or of sensation, or of both, in some particular part, or parts, of the body, without coma". Whether there is ever an entire loss of sensation is a point not precisely settled, but the weight of authority appears to be greatest on the side, that the power of sensation does exist in some degree in all cases, and is not at all impaired in many:- indeed the same author, shortly afterwards, observes that, "Palsy chiefly consists in the loss of voluntary motion; for sensation in a greater or less degree

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generally remains. nay, in certain cases, it is morbidly increased"; and then states, "I never saw a case of Palsy, in which sensation was entirely lost" - On this point Dr. Good speaks very clearly, and nearly to the same amount - He says "The nerves chiefly affected, are those subservient to voluntary motion, but the accompanying nerves of feeling, in most cases, participate in the torpitude, tho' not in an equal degree" - The appearance of presumption might deter me from attacking any opinion of Dr. Cooke's, were I not supported in so doing, both by the assertions of that eminent gentleman himself, and of Dr. Good. For it is very evident that the statements of the former, (which follow his definition and which are quoted from him above) are nearly in direct opposition to that part of his definition, which says, "that palsy consists in a total loss of sensation" - Were it not better to have said, "It is a disease in which there is a diminution, or an entire loss, of the power of voluntary motion, accompanied, generally, by a greater or less diminution of that of sensation without Coma?

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Coma? This alteration is humbly suggested, as it may perhaps lead to a more correct idea of the disease; if it is wrong, it is the result of a misconception, and can do no injury to the reputation of that Author, whose genius, and whose experience have shed so much light upon the medical World. The humble follower in the path of Science, has little left him but to imitate; for, while there are many subjects still involved in darkness, and in mistery, they have been so often assailed by the talent of preceding ages, that we are forced to turn from their investigation in despair, with the sad conviction, that, he, who would shine in the present day, must be content to do so with a borrowed light. The question then occurs, how are we to account for the fact, that in Paralysis there may be a loss of motion, while the power of sensation remains entire, and that sensation may be impaired, without any injury of the power of motion? Different theories have been advanced. The present explanation seems to be, that there are two sets of nerves, one for motion, the other, for sensation. These are distinct in their origin, course, and distribution.

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distribution, but confined in the same sheath; and that, on this account, the nerve of motion may be injured, without at all involving the nerve of sensation. Mr. C. Bell, in his late work on the nervous system, gives an account of his experiments upon dogs, rabbits, and apes, in which he divided the nerves of motion, the consequence of which was, a loss of the power of motion, in the part supplied by that nerve, while the power of sensation was in no way lessened; and of others, in which he divided the nerves of sensation, in which case, the power of sensation was lost, while that of motion was as perfect as ever. It would appear, then, that an injury done to one set of nerves, does not necessarily produce a corresponding effect upon the other set, which at once explains the apparent phenomenon. The same author in a communication, upon the subject, to Dr. Cooke, concludes with the remark, "that witnessing so different an effect as that of palsy on one side, and convulsion on the other side of the ~~[illegible]~~ body, the subject has appeared to me so obscure, and difficult, that I have never ventured to grapple with the question" &c. If this great physiologist

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physiologist has never ventured to grapple with the question, we must wait with patience, until time, and a longer experience shall dispel the clouds of doubt which envelope it, and be satisfied, at present, to know, that the fact is so, without being able to account for it — Another matter of dispute among writers on this disease, is, whether the sensation of Cold is a constant attendant upon an attack of it, but it is now generally conceded to be so, and should be considered as one of the characteristics of the affection — Sensation is not then lost —

Paralysis is divided into three distinct species, adapted to the manner in which it attacks, and to the parts affected — When one half of the Body is affected longitudinally, that is to say, when one side of the Face, and the Arm, Leg, &c. of that side is the seat of the disease, it is denominated 'Hemiplegia'; when the Body is attacked transversely, it receives the name of 'Paraplegia', and when only certain muscles, or a particular limb becomes paralytic, it is called, 'Paralysis partialis' — The first is met with more frequently, than either of the other two, and, in the generality of cases,

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cases, is the effect of Apoplexy; while many instances occur, in which it cannot be traced to any such disease. Some Authors assert, whose opinions are esteemed highly, that by a strict attention, and a rigid examination, some of the Appearances of Apoplexy will, in the greater number of Cases, be found to precede an attack of Hemiplegia.

'Paraplegia' is said, most generally, to be owing to some disease of, or injury done to, the Spine. It may almost always be ascribed to this Cause, when the lower half of the Body is affected, & this, in the opinions of most writers on the subject, is oftener the Seat of the disease, than the upper part of the Body. Some of the Causes of 'Hemiplegia', and Consequently of Apoplexy, are also enumerated among those of this form of the disease. When it arises from injury, or disease of the Spine, it is said to make its attack suddenly, and in the other Case, its appearance is reported to be slow, and its approach insidious.

'Paralysis partialis' may be the effect of the general Causes of the other varieties, owing its limited extent to those Causes acting in a slighter degree, or not being sufficiently powerful to

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to produce one of the other forms - Partial palsy may be the precursor of 'Hemiplegia', or 'Paraplegia', and it's farther progressing prevented, it may be made to exist in this limited extent, thus, rendering it ascribable to one of those diseases, or to the causes producing those affections - But Local palsy has it's own peculiar causes, independent of either of the other forms - These are, Tumours pressing upon the nerves, exposure of a particular part of the body to a current of cold, damp, air, and, also exposure to the fumes of certain metallic substances, especially of Lead, and Mercury - Workers in these articles are said to be peculiarly liable to the disease, and instances are related of persons having been attacked from sleeping in a newly painted room, in which white lead had been employed, and others, where they have been seized with it, from staying in a room where lead was frequently melted; while cases are not wanting to prove the fact that the Mercurial preparations are equally instrumental - Fatigue of certain muscles is also enumerated amongst the other causes, and likewise irritation of the intestines -

Causes of General Palsy. The predisposing causes of this

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this disease are the same as those of Apoplexy, in as much as, the latter affection generally precedes the former. These are principally advanced age, debilitated Constitution, and certain peculiar states of the System. Although the disease most frequently makes its attack upon persons advanced in years, yet, children are by no means exempt. They may be hereditarily disposed to it, or they may possess those habits of body, which are found to favor, and facilitate the existence of this malady: such as a large head, short neck, corpulency &c. A sedentary mode of life, especially when accompanied by habits of intemperance in eating or drinking: the cessation of certain accustomed discharges, as a suppression of the Menses, or of a copious hemorrhoidal flux, or the drying of long standing Ulcers &c.

The Chief Exciting Causes are extremes of Heat, and Cold, an exposure to the rays of the Sun, too frequent use of the warm bath, drinking hot, diluent liquors immoderately &c. The passions of the mind, as, Grief, Fear, and Anger, frequently produce the disease. These are also exciting Causes

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of apoplexy, but here Palsy draws a line of distinction between itself and that disease; for although the above are causes common to both, yet if they do not act in a sufficient degree to excite apoplexy, the consequence may be Palsy – Much dispute has arisen as to the influence of compression in this disease – The advocates for it, say, that it is always owing to compression, others that it never is – The former adduce many experiments to substantiate their opinion; among these is M. Portal – Dr. Cooke has enumerated many of this gentleman's experiments, in which pressure, if sufficiently strong, and long continued, did bring about the result; whilst M. Serres, who denies the theory of pressure, says, that his experiments confirmed him in his opinion – How are these contradictory statements to be reconciled? The error into which these gentlemen seem to have fallen, is, that one of them declares pressure to be always the cause, and the other, that it never is – The fact then appears to be, that Apoplexy, and Palsy may very often be ascribed to this cause, and that, in many instances, they cannot be traced to it –

The Diagnosis and Prognosis, are said to be easy – The history

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history of this Disease, when compared with of Apoplexy, (which it most resembles) will enable us to establish the first, and renders it so manifest that there is little fear of mistaking this for any other affection. If the distortion is lessened, a greater freedom of motion established, the action of the Bowels regular, and especially a sense of returning warmth experienced, the Prognosis is favorable. But if the disease has been of long standing, the limbs much wasted, and debility considerable, a cure is deemed nearly hopeless.

Treatment. This is divided by authors into that which is applicable to Hemiplegia, that to Paraplegia, and that to Local Palsy. The general treatment of the disease may be summed up in a few words. The limits of a Thesis will not allow me to enter into that appertaining to the different varieties, which at best would necessarily be a compilation, my experience being too slight to warrant my suggesting any thing new; but I will presently, with the permission of those before whom this paper has to appear, state a case of Hemiplegia, which fell under the treatment of my Preceptor Doctor John Cutler

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of Richmond, the attending Physician of the Infirmary of that place, and the progress of which, I had the honor, and satisfaction of witnessing with him. The general Treatment of Palsy divides itself into that which is proper as a preventive, and that which is suitable when the disease has made its appearance. It has already been stated, that certain habits of the Body predispose to the disease, such as, a large head, short neck &c. Under these circumstances, we cannot remove the predisposing cause, so that our remedies must consist of those articles which will operate as palliatives. These are low diet, abstinence from all Liquors which tend to heat the system, and increase arterial action, moderate exercise, so as to induce perspiration without fatigue, whereby the body would become overheated, and too great an action of the lungs induced, the consequence of which might be an accelerated flow of Blood to the head. The Bowels should be kept open by mild Laxatives, and Dr. Cooke recommends, in cases where there is a natural tendency to apoplexy, Blisters, Setons, or issues, in the neighbourhood of the head, so as to keep up a constant discharge. When the disease has made its appearance

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attended by apoplectic symptoms, venesection must be resorted to. This of course is to be regulated by circumstances, as the age of the Patient, his general Constitution, strength &c. But when not contra-indicated, the Lancet must be used boldly; the quantity of blood drawn should be large, and repeatedly taken. Purgatives are next to be employed, until the Bowels have been freely evacuated. Emetics next claim our attention, but these are to be given with considerable caution. The stomach when thrown into violent action tends greatly to increase the flow of blood to the head, and whilst any such disposition in the system remains, emetics should be avoided if possible, or, if there be an accumulation of foul matter in the stomach, they should be postponed, until that predisposition is removed.

Diaphoretics, diuretics, and sialogogues have all had their advocates, but in the present day are seldom, or never employed. When the disease is of long-standing, and all tendency to apoplexy has disappeared, or, in other words, when it exists only as Palsy, independent of its primary causes and

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symptoms, stimulants become highly useful - These are ap=
=plied externally, and internally - Of the former, Friction,
Blisters, Sinapisms, fomentations, the warm, and Cold bath, Elec=
=tricity, and Galvanism, have all had their share of Confidence -
Electricity, particularly has been found beneficial. The Euro=
=pean writers, and especially the French, speak very highly
of it - Many Cases are recorded of its efficacy, upon authority
which must ever Command respect - The mode of applying
it, is by means of the wooden point, by which, it is administered
silently, and moderately, and the ill Consequences, by some said
to result from a shock or spark, avoided. This remedy however
has failed in many instances, and its effects, though beneficial
at first, being evanescent, it has, of late years, been laid aside -
The same may be said of Galvanism, which we are recommended
to apply moderately at first, and to increase the number of plates,
and Consequently the force, gradually - The actual Cau=
=tery, and Moxa have both been employed, and are much
Confided in by some Practitioners -

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Toxicodendron, or Poison Oak, the Strichnos Nux Vomica, the Horse Radish, and the Mustard Seed. The leaves of the Poison Oak are used, given at first in the dose of half a grain, repeated twice, or three times during the day. it is then gradually increased to three, four, five, and six grains per diem. The Nux Vomica resembles the Poison Oak in its effects; but possesses this advantage, that we are able to administer it in larger doses, without the fear of doing an injury to the patient. This remedy was employed in the case alluded to above, an account of which I shall now give.

"Eppes Hughes, aged forty two, belonging to the City Guard, was attacked, on the night of — November, 1826, while on guard, with vertigo, loss of muscular power, and speech, but, according to his own account, retaining perfect consciousness. In about fifteen, or twenty minutes, he recovered a partial use of his speech, and the entire muscular power of the right side, there being a total paralysis of the left, attended with a sensation of great coldness, and a difficulty of micturating. Several days previous to the attack, he had complained of occasional

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vertigo, which was ascribed to his intemperate habits. He was admitted into the Infirmary at Richmond, in April 1827, and was first seen by Dr. John Cullen, on the first of June following. From what could be learnt of his previous treatment, nothing more than slightly stimulating frictions had been employed, which were productive of little, or no benefit; The left side still paralytic, with the sensation of cold; the patient complaining of occasional shooting pains in the extremities, and difficulty of passing his urine; his face distorted, and drawn to the right side - pulse small, regular, and at about sixty five; tongue clean, and the functions of the digestive canal well performed. He was ordered, Sub: Mur: Hydr: grs xij

Pulv: Jalap: " xxv, which operated well, and the day following the treatment with Nux Vomica commenced. Two pills, each containing grs iv, were given him during the day, which quantity was continued four days without any visible effect. Three pills were now ordered, each containing grs iv, when at the expiration of three days, the number was increased to four pills per diem. The day following his

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taking this additional quantity, the patient reported that the leg of the affected side, had been drawn forcibly upwards and forwards, and the arm, of the same side, backwards; and that there was a sense of heat experienced over the entire paralytic portion. The continuance of the four pills being attended with no additional effect, at the expiration of four days, another pill was added to the number, which served only to keep up the convulsive movements. Twenty four grains were now ordered, when so remarkable an increase of the effect took place, that the Patient was tripped up several times when in the act of moving. This dose was continued a few days, when finding the effect subsiding, twenty eight grains, per diem, were administered. The effect of this quantity made its appearance chiefly at night, when the patient was awakened, by being, as he reported, so forcibly drawn from his bed, that he thought some one was actually raising him. The remedy was now laid aside for a time, an active Cathartic prescribed, and the spine irritated in its whole course with Tartar Emetic Ointment. The healthy side, during all this period was

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no wise affected by the remedy, nor did it excite any disturbance of the head, stomach, or intestines, its action being confined to the paralytic side exclusively; which had been so far benefited, as to enable the patient to walk with tolerable facility, to go through the manual exercise, indicating the partial restoration of muscular power to the arm, and the distortion of the face was considerably diminished – The treatment was suspended for some days, during which time, he was ordered to take moderate exercise; when, on the 12th. of July, the Nux Vomica was resumed, in the dose of twenty four grains during the day, which on the 14th. was increased to thirty two grains. This reproduced the convulsive movements, amounting in a short time to nervous tremors; on which account the remedy was again laid aside – His general health is now good, the power of motion in a great measure restored, no difficulty of micturating, and an equality of heat over the whole surface established; while the distortion of the face is scarcely perceptible.

Many cases similar to this, have been recorded, attended with like results, from the use of the Strychnos Nux Vomica,

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Vomica, and every one that is now added to the list, will serve to strengthen our confidence in it. The use of this medicine is said to have been attended with tetanic symptoms, resulting most probably however from its abuse; but until it is shewn, that it takes place in a proportionate number of cases, we are warranted in employing it.

The root of the horse radish, and the seeds of the Sinapis, or Mustard, are given in substance, infusion, and decoction, in large doses; and are pronounced to be efficacious. The whole catalogue of Stimulants has been exhausted by different authors. The Cantharides, and Volatile Alkali however, deserve particular attention, and we should certainly place great confidence in the latter, when we find it acting so powerfully, and so beneficially, in the greater number of diseases, which require the use of this class of remedies. When a cure has been perfected, the patient should be cautioned, never to expose himself to a cold damp atmosphere, to avoid all strong liquors, and to be very careful in his diet. The Flannel roller, or flan-

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=ned worn next the skin has been found by some of our most eminent practitioners a great preservative against cold, and should be used by such patients.

I have thus endeavoured to give the History, Causes &c. of Palsy; not however with the slightest hope that I could suggest anything new or instructive. But in the long List of diseases "that flesh is heir to", none is better calculated to command the attention of the Physician, or excite the sympathy of the Philanthropist, than the one just under consideration:- for it is one, whose ravages are not confined to the Body, but often extend to the Mind; one, not causing immediate death, its true, but which dooms the sufferer to a life of mental, and corporeal inactivity; and one, certainly, which, when completely under our control, will add greatly to the many comfortable reflections of the Practitioner, and entitle him to the appellation of the Benefactor of Mankind.